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Title : Dusky Dolphins (Lagenorhynchus obscurus): Fatty acid composition of their blubber and of their prey

Category : Ecology

Student : Not Applicable

Preferred Format : Oral Presentation

Abstract : The fatty acid (FA) composition of the blubber of five dusky dolphins (Lagenorhynchus obscurus) from the Northern Benguela ecosystem (South East Atlantic) and their main prey was determined. The dolphins where accidentally caught during a hydroacoustic research survey with R/V "Dr. Fridtjof Nansen" in September 2002. Their stomach contents consisted mainly (98 %) of cape horse mackerel (Trachurus trachurus capensis), which was the dominant fish species in the area. Other potential prey species were sampled based on their abundance in the ecosystem and previous studies of dusky dolphin diet. These included; sardine (Sardinops sagax), anchovy (Engraulis capensis), round herring (Etrumeus whiteheadii), cape hake (Merluccius capensis), gobies (Sufflogobius bibarbatus) and squid (Todarodes sagittatus angolensis). Differences in FA composition of the inner and outer blubber layer of the dolphins were substantial, with higher relative amounts of monoenic FAs with 14, 16 and 18 carbons in the outer layer and higher relative amounts of saturated, long chain monounsaturated and polyunsaturated FA in the inner layer. This stratification is similar to the general pattern that has been observed in a variety of marine mammals, but the degree of stratification is the highest yet observed, with the long-chained (n3) FAs being more than 20 x more abundant in the inner than in the outer layer. The whole-body FA composition of the prey was highly species specific. All prey species had FA compositions that were different from the blubber of the dolphins. The FA composition in the dolphins' inner blubber was least different from that of the prey, but identification of the proportion of the various dietary items consumed by the dolphins, or tracing changes in the proportion of the prey species consumed, does not appear to be feasible via FA composition of the blubber of this marine mammal species.